

REMARKS

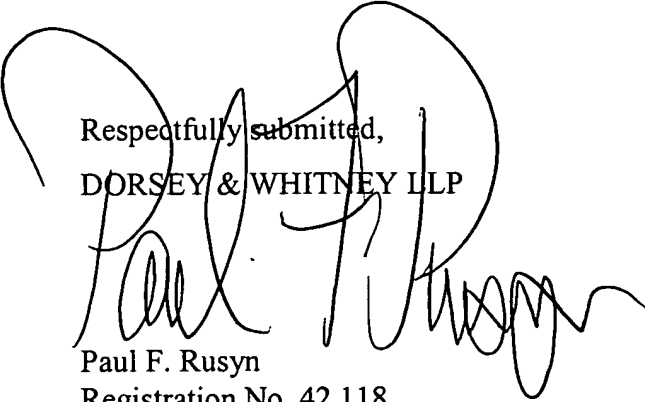
Claims 4, 76, 77 and 81-85, and newly added claims 89-92 are currently pending in the present patent application. In an Office Action mailed November 29, 2002, the Examiner rejected claim 4 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,723,384 to Park *et al.* ("Park"), and rejected claims 4, 81-83, and 85 under 35 U.S.C. § 103(a) as being unpatentable over Park in view of U.S. Patent No. 6,162,715 to Mak *et al.* ("Mak-I") and alternatively over Park in view of U.S. Patent No. 5,332,444 to George *et al.* ("George"). Claim 84 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Park in view of Mak-I and further in view of U.S. Patent No. 6,309,713 B1 to Mak *et al.* ("Mak-II").

The Examiner also objected to claims 4, 76, and 81 under 37 C.F.R. § 1.75(c) as being of improper dependent form. Each of these claims is an independent claim, and thus these objections are not understood. The Examiner is requested to clarify or withdraw this objection.

In all the claim rejections, the Examiner relies on one of the cited references for disclosing "diborane," which was one of the materials in the groups recited in the prior claims. Claims 4, 76, and 81 have been amended to remove the recitation of diborane from the recited groups of materials. These amendments narrow each of these independent claims, and thus necessitate no additional search by the Examiner due to these amendments. None of the cited references discloses the group of materials recited in each of the amended claims, namely phosphine and methylsilane. Accordingly, these amendments place the case in condition for allowance, with the combinations of elements recited in each of these claims being allowable. With regard to the independent claims, although the amendments narrow the scopes of claims 4, 76, and 81, this does not mean that all equivalents to the recited materials in the amended groups are precluded from the scope of the amended claims under the doctrine of equivalents.

All pending claims are in condition for allowance, and favorable consideration and a Notice of Allowance are respectfully requested. The Examiner is requested to contact the undersigned at the number listed below for a telephone interview if, upon consideration of this amendment, the Examiner determines any pending claims are not in condition for allowance. The undersigned also requests the Examiner to direct all future correspondence to the address set forth below in the event the Examiner shows a different correspondence address for the attorney of record.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made".



Respectfully submitted,
DORSEY & WHITNEY LLP

Paul F. Rusyn
Registration No. 42,118

PFR:asw

Enclosures:

- Postcard
- Check
- Fee Transmittal Sheet (+ copy)
- Supplemental Information Disclosure Statement (+ copy)
- Form PTO-1449
- Cited Reference (1)

1420 Fifth Avenue, Suite 3400
Seattle, Washington 98101-4010
(206) 903-8800 (telephone)
(206) 903-8820 (fax)

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claims 4, 76, 77, and 81 have been amended as follows:

4. (Four times Amended) A method of passivating a conductive material, comprising:

providing said conductive material, wherein said conductive material has an ability to associate with oxygen; and

[directly] exposing said conductive material to a material selected from the group consisting of [diborane,] phosphine, and methylsilane[, hexamethyldisilane, and hexamethyldisilazane].

76. (Thrice Amended) A method of passivating a conductive layer, comprising:

providing a tungsten nitride layer;

providing a polysilicon layer on the tungsten nitride layer; and

exposing the tungsten nitride layer to a material selected from the group consisting of [diborane,] phosphine, and methylsilane[, hexamethyldisilane, and hexamethyldisilazane].

77. (Twice Amended) The method in claim 76, wherein exposing the tungsten nitride layer comprises exposing the tungsten nitride layer to at least one material in the recited group under process conditions comprising:

a flow rate of the material of about 2 sccm to about 400 sccm;

a flow rate of about 50 sccm to about 100 sccm for an inert carrier gas;

a temperature ranging from about 150 to about 600 degrees Celsius;

a pressure ranging from about 50 millitorr to about 760 torr; and

a process time ranging from about 50 to about 500 seconds

[exposing the tungsten nitride layer causes a reduction in an ability of the tungsten nitride layer to associate with oxygen].

81. (Thrice Amended) A method of passivating a conductive layer, comprising:

providing a first conductive plug;

providing a first conductive layer on the plug;

exposing the first conductive layer to a material selected from the group consisting of [diborane,] phosphine, and methylsilane[, hexamethyldisilane, and hexamethyldisilazane]; and

after exposing the first conductive layer, forming a second conductive layer on the first conductive layer.